```
0001            NAME    DBSLDR
0003 ;*************************************************************
0004 ;                                                           *
0005 ;         PROGRAM ID:      DDBIOS LOADER                    *
0006 ;                                                           *
0007 ;         VERSION:         2.2          RELEASE 2           *
0008 ;                                                           *
0009 ;*************************************************************
0010 ;                                                           *
0011 ;         PROPERTY OF:     JADE COMPUTER PRODUCTS           *
0012 ;                          4901 W. ROSECRANS BLVD.          *
0013 ;                          HAWTHORNE, CALIFORNIA            *
0014 ;                          90250,   U.S.A.                  *
0015 ;                                                           *
0016 ;*************************************************************
0017 ; THE BIOS LOADER IS READ INTO THE DCM SECTOR BUFFER *
0018 ; AFTER DCM HAS INITIALIZED. THE BIOS LOADER PROGRAM *
0019 ; IS THEN   EXECUTED  WHICH READS THE   DDBIOS   MODULE *
0020 ; INTO BANK 1.   THE COMMAND BLOCK (IN DCM) IS SET TO *
0021 ; INDICATE   DDBIOS  MODULE SIZE AND THE   SYSTEM LOAD *
0022 ; ADDRESS.   THE   BIOS LOADER PROGRAM IS GENERATED BY *
0023 ; MOVCPM.COM AS THE COLD START LOADER (900-97F HEX). *
0024 ; THIS MODULE IS PROVIDED FOR REFERENCE PURPOSES.      *
0025 ;*************************************************************
0026 ; THE   DDBIOS LOADER IS COMPATABLE WITH  REV B AND C *
0027 ; DOUBLE D CONTROLLER BOARDS.   IT IS COMPATABLE WITH *
0028 ; FD1791-01 / FD1793-01.   IT WILL ALSO FUNCTION WITH *
0029 ; THE CURRENT FD179X-02 SERIES.                        *
0030 ;*************************************************************
```

```
                        0032 ;*******************************************************
                        0033 ; CONTROLLER PORT ASSIGNMENTS                          *
                        0034 ;*******************************************************
                        0035
>0000                   0036 BL$STS    EQU       000H      ;BOARD STATUS
>0000                   0037 BL$CTL    EQU       000H      ;BOARD CONTROLS
>0004                   0038 WD$CMD    EQU       004H      ;179X-02 COMMAND REGISTER
>0004                   0039 WD$STS    EQU       004H      ;179X-02 STATUS REGISTER
>0006                   0040 WD$SEC    EQU       006H      ;179X-02 SECTOR REGISTOR
>0007                   0041 WD$DTA    EQU       007H      ;179X-02 DATA REGISTER
>0010                   0042 XP$MTO    EQU       010H      ;MOTOR TIME OUT
>0040                   0043 XP$MTX    EQU       040H      ;MOTOR TIME EXTEND
>0080                   0044 XP$DSH    EQU       080H      ;DATA SYNC HOLD
                        0045
                        0046 ;*******************************************************
                        0047 ; 179X-02 COMMAND AND MASK.                            *
                        0048 ;*******************************************************
                        0049
>0088                   0050 DC$RDS    EQU   10001000B  ;READ SECTOR.
>009C                   0051 DM$RER    EQU   10011100B  ;READ ERROR MASK.
                        0052
                        0053 ;*******************************************************
                        0054 ; SYSTEM ASSIGNMENTS                                   *
                        0055 ;*******************************************************
                        0056
>0014                   0057 NMBR$K    EQU       20            ;SYSTEM SIZE IN K.
>0400                   0058 LNG$1K    EQU       1024          ;TOTAL BYTES IN 1K.
>5000                   0059 CPM$SZ    EQU       NMBR$K*LNG$1K  ;TOTAL SYSTEM BYTES.
>0600                   0060 BIOS$S    EQU       LNG$1K*3/2    ;BIOS ALLOCATED SIZE.
>4A00                   0061 BIOS$A    EQU       CPM$SZ-BIOS$S  ;BIOS LOAD ADDRESS.
                        0062
                        0063 ;*******************************************************
                        0064 ; INTERNAL MEMORY ASSIGNMENTS                          *
                        0065 ;*******************************************************
                        0066
>1000                   0067 BANK$0    EQU       1000H         ;LOWER BANK ADDRESS.
>0400                   0068 BANK$L    EQU       0400H         ;1K BANK LENGTH.
>1400                   0069 BANK$1    EQU       BANK$0+BANK$L  ;UPPER BANK ADDRESS.
>1370                   0070 IO$BLK    EQU       BANK$0+0370H  ;I/O BLOCK ADDRESS.
>1377                   0071 CB$STS    EQU       IO$BLK+0007H  ;COMMAND STATUS BYTE.
>1378                   0072 CW$LAD    EQU       IO$BLK+0008H  ;BIOS LOAD ADDR LOC.
>137A                   0073 CW$LNG    EQU       IO$BLK+000AH  ;BIOS LOAD LENGTH LOC.
>1380                   0074 SEC$BF    EQU       BANK$0+0380H  ;SECTOR BUFFER AREA.
                        0075
                        0076 ;*******************************************************
                        0077 ; BIOS PROGRAM LINKAGE.                                *
                        0078 ;*******************************************************
                        0079
>0004                   0080 SEC$BG    EQU       4             ;FIRST BIOS SECTOR.
>0008                   0081 SEC$NM    EQU       8             ;NUMBER OF SECTORS.
>000B                   0082 SEC$EX    EQU       SEC$BG+SEC$NM-1 ;LAST BIOS SECTOR.
                        0083
                        0084 ;*******************************************************
```

```
                     0086 ;*********************************************************
                     0087 ; ASSEMBLER DIRECTIVES                                   *
                     0088 ;*********************************************************
                     0089
                     0090          PSECT    ABS                 ;ABSOLUTE ADDRESSING.
>1380                0091          ORG      SEC$BF              ;PROGRAM START POINT.
                     0092
                     0093 ;*********************************************************
                     0094 ; INITIALIZE BIOS READ OPERATION                        *
                     0095 ;*********************************************************
                     0096
1380   210004        0097 BEGIN:   LD       HL,LNG$1K           ;BIOS LOAD LENGTH.
1383   227A13        0098          LD       (CW$LNG),HL         ;LOAD LENGTH SET.
1386   21004A        0099          LD       HL,BIOS$A           ;BIOS SYSTEM ADDR.
1389   227813        0100          LD       (CW$LAD),HL         ;LOAD ADDRESS SET.
138C   210014        0101          LD       HL,BANK$1           ;BIOS LOAD POINT.
                     0102
                     0103 ;*********************************************************
                     0104 ; SET-UP FOR EACH READ SECTOR COMMAND                   *
                     0105 ;*********************************************************
                     0106
138F   FD21A813      0107 RD$SEC:  LD       IY,RD$TST           ;SET NMI VECTOR.
1393   3AC413        0108          LD       A,(SECTOR)          ;FIRST BIOS SECTOR.
1396   A9            0109          XOR      C                   ;INVERT (1791-01).
1397   D306          0110          OUT      (WD$SEC),A          ;SET 179X-02 SEC REG.
1399   3E88          0111          LD       A,DC$RDS            ;READ SECTOR CMND.
139B   A9            0112          XOR      C                   ;INVERT (1791-01).
139C   D304          0113          OUT      (WD$CMD),A          ;ISSUE 179X-02 COMMAND.
                     0114
                     0115 ;*********************************************************
                     0116 ; READ SECTOR OPERATION                                 *
                     0117 ;*********************************************************
                     0118
139E   DB80          0119 RD$BYT:  IN       A,(XP$DSH)          ;WAIT FOR DATA.
13A0   DB07          0120          IN       A,(WD$DTA)          ;INPUT INV DATA.
13A2   A9            0121          XOR      C                   ;INVERT (1791-01).
13A3   77            0122          LD       (HL),A              ;STORE DCM BYTE.
13A4   23            0123          INC      HL                  ;INCREMENT POINTER.
13A5   C39E13        0124          JP       RD$BYT              ;REPEAT OPERATION.
                     0125
                     0126 ;*********************************************************
```

```
                   0128 ;**********************************************************
                   0129 ; CHECK READ SECTOR STATUS, REPEAT UNTIL BIOS LOADED *
                   0130 ;**********************************************************
                   0131
13A8   E69C        0132 RD$TST: AND       DM$RER              ;TEST FOR ERRORS.
13AA   200D        0133         JR        NZ,ERRORS           ;ERROR DETECTED.
13AC   3AC413      0134         LD        A,(SECTOR)          ;GET SECTOR NMBR.
13AF   FE0B        0135         CP        SEC$EX              ;CHECK IF LAST SEC.
13B1   280F        0136         JR        Z,FINISH            ;GO IF FINISHED.
13B3   3C          0137         INC       A                   ;INCREMENT.
13B4   32C413      0138         LD        (SECTOR),A          ;STORE SECTOR NUMBER.
13B7   18D6        0139         JR        RD$SEC              ;READ NEXT SECTOR.
                   0140
                   0141 ;**********************************************************
                   0142 ; READ ERROR HAS BEEN DETECTED                            *
                   0143 ;**********************************************************
                   0144
13B9   327713      0145 ERRORS: LD        (CB$STS),A          ;DISPLAY ERROR STATUS.
13BC   AF          0146         XOR       A                   ;ZERO  A REGISTER.
13BD   D300        0147         OUT       (BL$CTL),A          ;DESELECT DRIVE.
13BF   DB10        0148         IN        A,(XP$MTO)          ;MOTOR OFF!
13C1   76          0149         HALT                          ;TERMINATE.
                   0150
                   0151 ;**********************************************************
                   0152 ; BIOS SECTOR HAVE BEEN LOADED                            *
                   0153 ;**********************************************************
                   0154
13C2   FB          0155 FINISH: EI                            ;ENABLE INTERRUPTS.
13C3   76          0156         HALT                          ;SHUTDOWN BOARD.
                   0157
                   0158 ;**********************************************************
                   0159 ; SECTOR NUMBER STORAGE                                   *
                   0160 ;**********************************************************
                   0161
13C4   04          0162 SECTOR: DEFB      SEC$BG              ;SECTOR COUNTER.
                   0163
                   0164 ;**********************************************************
                   0165         END
```

CROSS REFERENCE LISTING

SYMBOL	VALUE	TYPE	STMT	STATEMENT REFERENCES		
BANK$0	1000		0067	0074	0070	0069
BANK$1	1400		0069	0101		
BANK$L	0400		0068	0069		
BEGIN	1380		0097			
BIOS$A	4A00		0061	0099		
BIOS$S	0600		0060	0061		
BL$CTL	0000		0037	0147		
BL$STS	0000		0036			
CB$STS	1377		0071	0145		
CPM$SZ	5000		0059	0061		
CW$LAD	1378		0072	0100		
CW$LNG	137A		0073	0098		
DC$RDS	0088		0050	0111		
DM$RER	009C		0051	0132		
ERRORS	13B9		0145	0133		
FINISH	13C2		0155	0136		
IO$BLK	1370		0070	0073	0072	0071
LNG$1K	0400		0058	0097	0060	0059
NMBR$K	0014		0057	0059		
RD$BYT	139E		0119	0124		
RD$SEC	138F		0107	0139		
RD$TST	13A8		0132	0107		
SEC$BF	1380		0074	0091		
SEC$BG	0004		0080	0162	0082	
SEC$EX	000B		0082	0135		
SEC$NM	0008		0081	0082		
SECTOR	13C4		0162	0138	0134	0108
WD$CMD	0004		0038	0113		
WD$DTA	0007		0041	0120		
WD$SEC	0006		0040	0110		
WD$STS	0004		0039			
XP$DSH	0080		0044	0119		
XP$MTO	0010		0042	0148		
XP$MTX	0040		0043			

ERRORS=0000